

ABSTRACT

A constraining sheath for use around an endoprosthesis (e.g., a stent device, with or without a graft covering), which may be a balloon expandable endoprosthesis but more preferably is a self-expanding prosthesis. The endoprosthesis is coaxially enclosed within the constraining sheath, which is an outer, disruptable, preferably implantable tubular sheath, preferably made of ePTFE. The constraining sheath and endoprosthesis are preferably mounted together as an assembly on an angioplasty balloon for delivery. Deployment of the endoprosthesis entails inflating the angioplasty balloon to a pressure sufficient to disrupt or break the constraining sheath in a prescribed fashion, thereby allowing a self-expanding endoprosthesis to spontaneously deploy. The constraining sheath of ePTFE may be attached to the endoprosthesis and implanted along with the device, or alternatively attached to the balloon catheter shaft and removed with the balloon catheter. The angioplasty balloon's working length is preferably shorter than the length of the endoprosthesis. A endoprosthesis assembly incorporating a constraining sheath according to one embodiment of the invention is also provided with an additional packaging sheath.